Between March and September 2020, universities were required to close all on-campus activities and moved mainly online (Bolton and Hubble, 2020); universities are currently facing similar restrictions again. Student nursing programmes specifically were affected in two ways in spring last year. First, senior students could opt to become part of the workforce to meet the expected demand for care as SARS-CoV-2 infections increased exponentially. Second, clinical simulation and essential clinical skills teaching became impossible to deliver on campus because government restrictions precluded this (Bolton and Hubble 2020).

As a result of this second issue, the clinical simulation team at the University of Derby planned ways to replace the tasks they would otherwise have done in the skills laboratory, simulated ward and home environments. Clinical simulation is notorious for its intensive use of staff resources (Maloney and Haines, 2016) and became impossible during lockdown. The team introduced several initiatives, including investing in a state-of-the-art online simulation experience (Laerdal, 2020) and using clinical skills training boxes.

Clinical skills training boxes
Clinical skills training boxes are a simple but effective idea that allows student nurses to practise the skills they would usually learn in the skills laboratory in their own home. The boxes contain university-supplied clinical equipment and instructions; students book an appointment to collect a box from the university. In developing this initiative, we began by selecting the clinical skills to be included in the first set of boxes. This selection was guided by the limitations posed by health and safety requirements, and by the boxes’ dimensions. It became apparent that only basic equipment could be sent out for use by students in their own homes. Many clinical skills require either complex equipment or sharps (Nursing and Midwifery Council, 2018); however, we decided not to include needles or stitch-cutters in the boxes due to concerns around safe transportation and disposal of sharps. We decided the newest cohort of 68 student nurses, who began their studies in March 2020 and 60 of which used the boxes, would work with the clinical skills boxes initially to pilot the initiative. This cohort comprised both adult and mental health student nurses.

Key points
- Government restrictions prohibited on-campus clinical skills simulation and teaching during the coronavirus pandemic
- The University of Derby developed an initiative to lend students clinical skills training boxes to use at home
- Students booked a box for a week, containing university-owned equipment and instructions
- Feedback was generally positive: students reported improved competence and confidence in skills
- Future use is recommended, including as an adjunct to traditional learning following the pandemic

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Abstract
This article describes an initiative for students to practise clinical skills in their own homes using university-supplied instructions and equipment, implemented as a response to the restrictions to on-campus teaching during the coronavirus pandemic. It includes recommendations for future use, concluding that it would also be a useful adjunct to traditional training methods following the end of the pandemic.

Citation
Clinical Practice

Innovation

We selected four clinical skills that the university could easily support through at-home practice: temperature, pulse, respiration and blood pressure observation and recording (TPRBP); aseptic non-touch technique; urinalysis; and use of personal protective equipment.

The technical team ensured that each box contained sufficient equipment to allow practise of all the four skills at home. Each student was given one box; this contained multi-use observation equipment that they were required to return, as well as three envelopes of single-use non-returnable equipment. Antiviral wipes were included to allow the student to clean the equipment both prior to use and prior to its return, and the technical team assessed all non-returnable equipment to ensure it could be disposed of in household waste. We produced risk assessment forms and included them in the boxes so each student could complete one before using the equipment. Due to a concern that students might identify an abnormal TPRBP or urinalysis reading when practising the use of equipment on themselves, or a member of their household, we included a statement with the instruction sheet in each box covering the need to discuss any abnormal findings with their GP or practice nurse.

We arranged supply of the equipment via a booking system on the university’s online platform. Each student was able to book one box at a time that suited their availability and return it a week later. The booking system used a rotation method that ensured a gap of three days between each box’s bookings. This allowed equipment to be left untouched for 72 hours after its return to reduce the risk of SARS-CoV-2 contamination for the technicians unpacking and preparing it for the following student. All collection and return points were at an external door to the university to prevent unnecessary access to the building for student safety. We included directions to the collection points and instructions for safe collections and returns on the university’s online platform, along with learning support including videos, interactive resources and live, lecturer-led drop-in sessions.

Evaluation

The university’s clinical education team always evaluates new initiatives to ensure the quality and effectiveness of education; this is an educational evaluation rather than formal research. To provide this quality assessment, the university uses a well-known and reliable four-level evaluation model (Fig 1) that was most recently updated in 2016 (Kirkpatrick and Kirkpatrick, 2016; Kirkpatrick, 1996). For this evaluation, we used the model’s first two levels. Kirkpatrick advised these stages as at the base of any training evaluation: level 1 identifies students’ perceptions of the quality of the learning experience and level 2 establishes their self-assessment of the learning achieved.

Level 1: reaction

Students were invited to give written feedback via an electronic questionnaire after completing their learning. The questions covered the organisation of the initiative and the students’ overall experience with the equipment. Feedback from 24 students was generally positive and demonstrated the initiative was well conceived and delivered:

“It was a brilliant idea to provide the opportunity to have the clinical boxes. I thought that the process was really well organised and ran really well.”

“These boxes were amazing and cemented a lot of the theory side into place. I loved them.”

“The boxes have been a great help in practising these new skills.”

However, students reported feeling they would benefit from practising these skills further in the classroom with feedback from lecturers and peers. One student also highlighted travel distance to the university as an issue:

“Travel for collection and returning the clinical skill boxes for some us has been a huge problem. It is a long-distance drive [and you need] availability of the family transport on the due date to return the box.”

Level 2: learning

To self-assess their learning, students were asked to complete an electronic questionnaire before and after using the clinical skills box. During the pilot, a total of 60 students collected a box; 50% filled in the voluntary self-assessment form before use and 37% completed the post-use evaluation form. The pre-use questionnaires asked students to state whether they had practised these skills previously; both questionnaires asked them to rate their confidence and competence in conducting them.

Results showed that, before using the clinical skills box, 70% of the students had practised the skills previously, 70% felt confident in them and 63% felt competent in them. The evaluation forms demonstrated that 76% of students felt more competent in the skills and 95% felt more confident in them as a result of the initiative.

Recommendations for future use

Because this was a successful and effective initiative, we are likely to deliver it again for other cohorts of student nurses. This is supported by the fact that, while the scheme was running, we received several requests from students outside the pilot group for access to the clinical skills boxes.

A small number of students returned their equipment late. Consequently, we would develop a student contract to support any future schemes. The technicians also observed that the boxes being returned at various times on their allocated return day could be better managed through the provision of timeslots. If the scheme were expanded, it would require a larger booking system with administrative support.

Due to the coronavirus pandemic, the rules regarding the opening of university campuses are likely to continue to fluctuate, so this initiative may become a practical necessity again. Regardless, we have observed that it is a useful way for students to learn clinical skills using university-supplied equipment and instructions in their own homes, which could be continued after the pandemic as an adjunct to the usual on-campus clinical simulation and placement learning.

References


Nursing and Midwifery Council (2018) Future Nurse: Standards of Proficiency for Registered Nurses. NMC.